

## WHAT IS CLAIMED IS:

1. A medical device comprising:  
a structure for insertion into a living organism; and  
5 at least one radioprotective compound affixed to the structure, the  
at least one radioprotective compound eluting from the structure and  
entering the surrounding tissue to protect the tissue from ionizing  
radiation.
- 10 2. The medical device according to Claim 1, wherein the structure  
comprises a stent.
3. The medical device according to Claim 1, wherein the structure  
comprises a stent-graft.
- 15 4. The medical device according to Claim 1, wherein the at least  
one radioprotective compound includes compounds comprising sulphur.
5. The medical device according to Claim 4, wherein the at least  
20 one radioprotective compound comprises aminothiols.
6. The medical device according to Claim 5, wherein the at least  
one radioprotective compound comprises amiphostine.
- 25 7. An implantable medical device comprising:  
a stent;  
a polymeric matrix affixed to the surface of the stent; and  
at least one radioprotective compound incorporated into the  
polymeric matrix, the at least one radioprotective compound eluting from  
30 the polymeric matrix over a given time period and entering the  
surrounding tissue to protect the tissue from ionizing radiation.

8. The implantable medical device according to Claim 7, wherein the polymeric matrix comprises a fluoropolymer.
- 5 9. The implantable medical device according to Claim 7, wherein the polymeric matrix comprises first and second polymers.
- 10 10. The implantable medical device according to Claim 9, wherein the first polymer comprises a fluoropolymer.
- 10 11. The implantable medical device according to Claim 9, wherein the second polymer comprises an acrylic.
- 15 12. The implantable medical device according to Claim 7, wherein the at least one radioprotective compound includes compounds comprising sulphur.
13. The implantable medical device according to Claim 12, wherein the at least one radioprotective compound comprises aminothiols.
- 20 14. The implantable medical device according to Claim 13, wherein the at least one radioprotective compound comprises amiphostine.
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